31. (New) A method for cellular grafting according to claim 30, which comprises introducing embryonic cardiomyocyte cells into said infarcted myocardial tissue.

32. (New) A method for cellular grafting according to claim 30, which comprises introducing adult cardiomyocyte cells into said infarcted myocardial tissue.

33. (New) A method for cellular grafting according to claim 26, wherein said cardiomyocytes of said graft are non-immunogenic to said animal.

34. (New) A method for cellular grafting according to claim 26 wherein said cardiomyocyte cells of said cellular graft are genetically identical to cells of said animal.

35. (New) A method for cellular grafting according to claim 26 wherein said animal is a mammal.

36. (New) A method for cellular grafting according to claim 26, wherein said cardiomyocyte cells of said graft are non-immortalized.

37. (New) A method for cellular grafting according to claim 35 wherein said myocardial tissue is ventricular myocardial tissue.

38. (New) A method for cellular grafting according to claim 37, wherein said ventricular myocardial tissue is left ventricular myocardial tissue.

39. (New) A method for cellular grafting according to claim 26, wherein said cellular graft comprises cardiomyocyte cells intercellularly coupled to cardiomyocyte cells of said myocardial tissue by junctional complexes.

40. (New) A method for cellular grafting according to claim 26, wherein the cellular graft comprises cardiomyocyte cells that carry a transgene encoding a recombinant molecule.

41. (New) A method for cellular grafting according to claim 40, wherein the recombinant molecule is a protein.

42. (New) A method for cellular grafting according to claim 41, wherein the protein is delivered to said myocardial tissue by the graft cardiomyocyte cells.

43. (New) A method for cellular grafting according to claim 42 wherein the protein is an angiogenic factor or neurotrophic agent.

44. (New) A method for cellular grafting according to claim 43 wherein the protein is an angiogenic factor that induces neovascularization in the myocardial tissue.

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45. (New) A method for cellular grafting according to claim 44, wherein the angiogenic factor is basic or acidic Fibroblast Growth Factor, Transforming Growth Factor-Beta, Vascular Endothelial Growth Factor, or Hepatocyte Growth Factor.

46. (New) A method for cellular grafting according to claim 43, wherein the protein is a neurotrophic agent.

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47. (New) A method of treating diseased or damaged myocardial tissue comprising forming a graft of cardiomyocyte cells in said tissue, wherein the graft is viable for at least six months.

48. (New) A method for treating diseased or damaged tissue according to claim 47, which comprises the step of introducing embryonic cardiomyocyte cells into said myocardial tissue.

49. (New) A method for treating diseased or damaged tissue according to claim 47, which comprises the step of introducing adult cardiomyocyte cells into said myocardial tissue.

50. (New) A method for treating diseased or damaged tissue according to claim 47, wherein said cellular graft is for supplementing myocardial function.

51. (New) A method for treating diseased or damaged tissue according to claim 50, wherein said myocardial tissue is infarcted myocardial tissue.

52. (New) A method for treating diseased or damaged tissue according to claim 51, which comprises introducing embryonic cardiomyocyte cells into said infarcted myocardial tissue.

53. (New) A method for treating diseased or damaged tissue according to claim 51, which comprises introducing adult cardiomyocyte cells into said infarcted myocardial tissue.

54. (New) A method for treating diseased or damaged tissue according to claim 47, wherein said cardiomyocytes of said graft are non-immunogenic to said animal.

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55. (New) A method for treating diseased or damaged tissue according to claim 47, wherein said cardiomyocyte cells of said cellular graft are genetically identical to cells of said animal.

56. (New) A method for treating diseased or damaged tissue according to claim 29, wherein said animal is a mammal.

57. (New) A method for treating diseased or damaged tissue according to claim 47, wherein said cardiomyocyte cells of said graft are non-immortalized.

58. (New) A method for treating diseased or damaged tissue according to claim 57, wherein said myocardial tissue is ventricular myocardial tissue.

59. (New) A method for treating diseased or damaged tissue according to claim 33, wherein said ventricular myocardial tissue is left ventricular myocardial tissue.

60. (New) A method for treating diseased or damaged tissue according to claim 47, wherein said cellular graft comprises cardiomyocyte cells intercellularly coupled to cardiomyocyte cells of said myocardial tissue by junctional complexes.

61. (New) A method for treating diseased or damaged tissue according to claim 47, wherein the cellular graft comprises cardiomyocyte cells that carry a transgene encoding a recombinant molecule.

62. (New) A method for treating diseased or damaged tissue according to claim 61, wherein the recombinant molecule is a protein.

63. (New) A method for treating diseased or damaged tissue according to claim 62 wherein the protein is delivered to said myocardial tissue by the graft cardiomyocyte cells.

64. (New) A method for treating diseased or damaged tissue according to claim 63, wherein the protein is an angiogenic factor or neurotrophic agent.

65. (New) A method for treating diseased or damaged tissue according to claim 64, wherein the protein is an angiogenic factor that induces neovascularization in the myocardial tissue.

66. (New) A method for treating diseased or damaged tissue according to claim 65, wherein the angiogenic factor is basic or acidic Fibroblast Growth Factor, Transforming Growth Factor-Beta, Vascular Endothelial Growth Factor, or Hepatocyte Growth Factor.

67. (New) A method for treating diseased or damaged tissue according to claim 64, wherein the protein is a neurotrophic agent.

68. (New) A method for treating diseased or damaged tissue according to claim 47, wherein said cardiomyocyte cells are obtained by a process that comprises providing embryonic stem cells having a selection marker enabling selection of the cardiomyocyte cells from other cells, causing the embryonic stem cells to differentiate, and selecting the cardiomyocyte cells.